

Technology Innovation Project



Project Brief

TIP 297: EPRI Energy Efficiency Demo 2

Context

The electricity industry faces growing demand for power and the imperative to maintain reliable, affordable service while reducing carbon emissions. Utilities and policy makers in the United States and abroad are turning to energy efficiency and demand response resources meet these needs. BPA works collaboratively with others to “fill the pipeline” of energy efficiency opportunities for utilities to offer their customers.

The Electric Power Research Institute (EPRI) is an independent, non-profit company performing research in coordination with its members, which represent approximately 90% of the electricity generated and delivered in the U.S. In September 2012, BPA and EPRI co-sponsored the National Energy Efficiency Roadmapping Summit to create a shared research agenda, identifying technologies and research efforts that would accelerate the energy efficiency resource nationwide.

EPRI has created a research framework to evaluate the readiness of emerging end-use technologies for utility programs, along a continuum spanning technology scouting, assessment and lab testing, research and development (R&D) field testing and demonstration, coordinated early deployment, and full program rollout.

Participation in EPRI projects includes “membership” in their base program for a particular topic, plus additional opportunities to join “supplemental projects” defined to meet the needs of a subset of utilities and other partners, and funded separately.

BPA participated in EPRI’s first cycle of a supplemental project called Energy Efficiency Demonstration (“EE Demo 1.0”) in 2009 to take part in field testing of heat pump water heaters, including 40 installed in Pacific Northwest homes as a part of a national project including 160 sites.

Description

This TIP 297 project covers participation as a member in the Energy Efficiency Demonstration 2.0 project, which builds on the success of its predecessor by demonstrating the next cycle of emerging, high-potential, energy-efficient technologies through a national collaborative.

As with its predecessor project, Energy Efficiency Demonstration 2.0 will feature rigorous instrumentation and monitoring to measure performance factors such as energy savings under a variety of operating conditions.

Technologies demonstrated under this project have the potential to matriculate to the next stage of larger scale Coordinated Early Deployments of Efficient End-Use Technologies.

As of March 2013, EPRI is in the process of collaborating with participants in the project to identify the five technologies that will be tested in EE Demo 2.0. Each participating utility has the option of being a member of the collaborative, with access to learnings, or being a “host” which means that they will actually host research sites in their territory.

Each host technology package includes site-specific research design plans, including customized technology specifications, experimental design, site qualification and customer training for each site, equipment installation plans, instrumentation, and data monitoring systems.

Why It Matters

Field testing conducted in the EE Demo project is a critical step toward determining the reliability of savings estimates, and the customer acceptance of technologies that have performed well in the lab. Each of the technologies selected for Energy Efficiency Demonstration 2.0 have the potential to reduce electricity consumption in their respective end-use applications by up to 30% compared to baseline alternatives. With the support of participants and engagement with manufacturers and industry groups, this project will address this missing link of independent field performance data so critical to justify utility investment in either larger-scale coordinated early deployments or energy efficiency programs.

This project is related to BPA’s commitment to acquire cost effective energy efficiency. BPA has determined that in order to meet its energy efficiency goals cost effectively over the long term, it is necessary to conduct ongoing R&D and emerging technology research. This includes development and adoption of energy-efficient and demand response technologies to accelerate their adoption into utility programs, influencing the progress of codes and standards, and ultimately creating market transformation – achieving the savings at little or no cost to the utility.

TIP 297: EPRI Energy Efficiency Demo 2

Goals and Objectives

The objectives for this collaborative project include:

- Measure performance of technologies in the field, identifying critical factors that affect energy use
- Identify the obstacles that would impede the adoption of efficient technologies Generate transferrable results
- Generate transferrable results

Project Start Date: January 1, 2013

Project End Date: December 31, 2013

Links (Optional)

Reports & References (Optional)

Participating Organizations

EPRI
SRP
Oncor
TVA
Southern

Funding

Total Project Cost:	\$1,000,000
BPA Share:	\$50,000
External Share:	\$950,000
BPA FY2013 Budget:	\$50,000

For More Information Contact:

BPA Project Manager:
Jennifer Williamson, jcwilliamson@bpa.gov

